



ORBITAL SANDER

MODEL No: CAT111

Part Nos: 3120126

OPERATING & MAINTENANCE INSTRUCTIONS



GC0409

INTRODUCTION

Thank you for purchasing this CLARKE product.

Before attempting to use the sander, please read this manual thoroughly and follow the instructions carefully. In doing so you will ensure the safety of yourself and that of others around you, and you can look forward to the sander giving you long and satisfactory service.

GUARANTEE

This CLARKE product is guaranteed against faulty manufacture for a period of 12 months from the date of purchase. Please keep your receipt as proof of purchase.

This guarantee is invalid if the product is found to have been abused or tampered with in any way, or not used for the purpose for which it was intended.

Faulty goods should be returned to their place of purchase, no product can be returned to us without prior permission.

This guarantee does not effect your statutory rights.

ENVIROMENTAL PROTECTION



Do not dispose of this product with general household waste. All tools, accessories and packaging should be sorted, taken to a recycling centre and disposed of appropriately.

PARTS & SERVICING

For parts & Servicing, please contact your nearest dealer, or CLARKE International, on one of the following numbers.

PARTS & SERVICE TEL: 020 8988 7400

PARTS & SERVICE FAX: 020 8558 3622

or e-mail as follows:

PARTS: Parts@clarkeinternational.com

SERVICE: Service@clarkeinternational.com

CONTENTS

Introduction	2
Guarantee	2
Environmental Protection	2
Parts & Service Contacts	2
Technical Specification	3
General Safety Precautions	4
Overview	7
Assembly	7
Operating Instructions	8
Troubleshooting	9
Maintenance	10
Parts Lists and Diagrams	11
Vibration Emissions	13
Declaration of Conformity	15

TECHNICAL SPECIFICATION

Feature	Specification
Weight	1.8 kg (4.1 lbs)
Dimensions (l x w x h)	180 x 90 x 120 mm
Stated Free Speed	8000 rpm
Pad Size	90 x 165 mm
Working Air Pressure	90 psi (6.2 bar)
Average Air Consumption	6 cfm (170 l/min)
Inlet Air Connection	1/4" BSP
A-weighted sound pressure level	91.5 dB (A)
Sound power level	102.5 dB(A)
Vibration at the handle	0.8 m/s ²

Please note that the details and specifications contained herein, are correct at the time of going to print. However, CLARKE International reserve the right to change specifications at any time without prior notice.

SAFETY PRECAUTIONS

WORK ENVIRONMENT

- Keep the work area clean and tidy.
- Dress appropriately - Do not wear loose clothing or jewellery. Tie long hair out of the way.
- Keep children and visitors away - Do not let children handle the sander. Make sure that any other persons in the work area are dressed suitably and are wearing eye and ear protectors.
- Keep the air supply hose away from heat, oil and sharp edges.
- Do not fit the sander to any stand or clamping device that may damage the tool.

GENERAL USE

- Stay alert and use common sense - do not use the sander when you are tired or under the influence of alcohol, drugs or medication.
- Always wear eye protection when using the sander - eye protection must provide protection from the front and the side.
- Always wear a dust mask when sanding dusty materials.
- Always wear ear protectors when using the sander.
- Do not over-reach - Keep proper footing and balance at all times.
- Never use any type of bottled gas as a source of power for the sander.
- Do not connect the air supply hose with your finger on the trigger of the sander.
- Do not exceed the maximum pressure for the sander: 90 psi / 6.2 bar.
- Check hoses for leaks or worn condition before use and ensure that all connections are secure.
- Do not use the sander for any other purpose than that described in this booklet.
- Do not carry out any alterations or modifications to the sander.
- The sander should be serviced as required by your CLARKE dealer.
- Never use the sander if it is defective or operating abnormally.
- ALWAYS ensure the workpiece is firmly secured leaving both hands free to control the sander.
- ALWAYS ensure the sander has stopped before putting it down after use.
- ALWAYS ensure that any attachments are correctly fastened before connecting the sander to the power supply.

- Always disconnect from the air supply when:
 - a) Performing any maintenance.
 - b) The sander is not in use.
 - c) The sander will be left unattended.
 - d) Moving to another work area.
- Avoid damaging the sander for example, by applying excessive force.
- ALWAYS maintain the sander with care. Keep it clean for best and safest performance.
- Quick change air-line couplings should not be located at the tool. They add weight and could fail due to vibration.
- DO NOT force or misuse the sander. It will do a better and safer job at the rate for which it was designed.
- This sander vibrates during use. Vibration may be harmful to your hands or arms. Stop using the tool if discomfort, a tingling feeling or pain occurs and seek medical advice before resuming use. Refer to Vibration Emissions on page 13.

TRANSPORTATION

- Never carry the sander by the air supply hose.
- Never carry the sander with your finger on the trigger.

STORAGE

- When not in use the sander must be disconnected from the air supply and stored in a dry place out of the reach of children (preferably in a locked cabinet).
- Avoid storing the sander in environments where the temperature falls below 0°C.

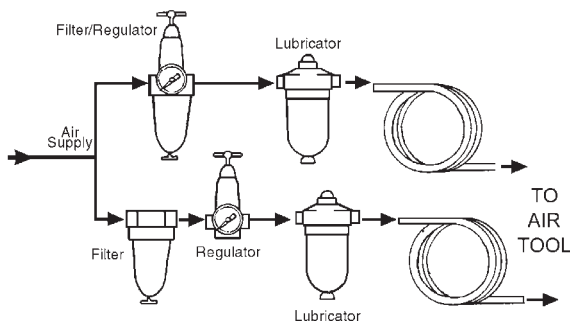
AIR SUPPLY REQUIREMENTS



WARNING: COMPRESSED AIR CAN BE DANGEROUS. ENSURE THAT YOU ARE THOROUGHLY FAMILIAR WITH ALL PRECAUTIONS RELATING TO THE USE OF COMPRESSORS AND COMPRESSED AIR SUPPLY.

- Air compressors used with the sander must comply with the appropriate European Community safety directives.
- Use only clean, dry, regulated compressed air as a power source for the sander.
- A build up of moisture in the air compressor will accelerate wear and corrosion in the sander. Ensure any moisture is drained from the compressor daily and the inlet filter is kept clean.
- If an unusually long air hose is required, (over 8 metres), line pressure may need to be increased.

A typical airline arrangement is shown on the right. If an automatic in-line filter/regulator/lubricator unit is used it will keep the tool in good condition but should be regularly checked and topped up with oil.



IMPORTANT: If a filter/lubricator unit is not used, the sander should be lubricated with 2 to 6 drops of oil, at least once a day or after 2 hours work, depending upon the working environment. The oil can be inserted through the airline connection point.

AIRLINE SAFETY

- Never exceed the maximum operating pressure for the sander. A pressure of 90 psi with a flow of 6 cfm is required. Too high an air pressure will shorten the life of the tool due to excessive wear.
- The air hose must be rated at least 150% of the maximum operating pressure of the tool.

OVERVIEW

The CAT111 Orbital Sander is ideal for use in the automotive industry or any task of smoothing wood, fibreglass or body filler. The sander features a balanced ball-bearing design, rear exhaust & automatic throttle release. The CAT111 sander holds standard 93 x 232mm sanding sheets which are available from your CLARKE dealer.

Unpack and lay out the components, checking against the following list. Any damage or deficiency should be reported to your CLARKE dealer immediately.

- Orbital Sander
- Male screw-in adaptor
- Bottle of Airline Oil
- Operators Manual (this document)

ASSEMBLY

1. Remove the plastic blanking plug from the connection port of the sander .
2. Pour 2-3 drops of CLARKE airline oil into the air inlet. This should be done regardless of whether or not a lubricated air supply is to be used.
3. Connect a suitable hose to the sander as shown. Use the screw-in adaptor supplied if required.
4. Connect the other end of the hose to the compressor.
(A whip hose with a quick fit coupling is available from your CLARKE dealer).
5. Turn on the air supply and check for air leaks. Rectify any found before proceeding.

Your sander is now ready for use.



OPERATING INSTRUCTIONS

IMPORTANT: Only use sanding sheets designed for use with a rectangular orbital sander; pre-cut sheets (93 x 232mm) are available from your CLARKE dealer.

1. Attach a sanding sheet to the base of the sander using the spring-loaded clips at each end of the base as in Fig 1.
- Ensure the sanding sheet is correctly aligned with the sander and pulled tight enough to avoid any creasing.
2. Place the sander on the workpiece and press down on the trigger to start the sander.
3. Adjust the operating speed if required, by twisting the air regulator as in Fig 2.
4. Release pressure from the trigger to stop the sander.
5. Always ensure the sander has stopped before putting it down.

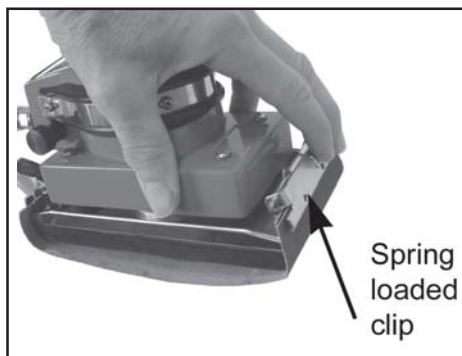


Fig 1



Fig 2

DISCONNECTING THE AIR SUPPLY

1. Do not disconnect the air supply hose until the compressor has been shut down and the compressed air released from the air line.
2. Once the pressure has been released, disconnect the airline hose from the sander.

STORAGE

1. Store the sander safely in its box in a dry, secure environment.
2. If the sander is not to be used for longer than 24 hours, run a few drops of CLARKE airline oil into the air inlet and run the tool for a few seconds to ensure that the oil has been well distributed throughout the sander.
3. When storing, ensure the blanking plug is replaced at the airline connection port once the airline has been disconnected.

TROUBLESHOOTING

SYMPTOM	PROBLEM	SOLUTION
Tool runs at normal speed but slows under load.	1. Motor parts worn. 2. Worn or sticking mechanism due to lack of lubricant.	1. Return to dealer for overhaul 2. Drip air tool lubricating oil into air inlet and soak moving parts.
Tool runs slowly. Air flows lightly from exhaust.	1. Motor parts jammed with gum &/or dirt particles. 2. Regulator in closed position. 3. General airflow blocked by dirt.	1. Examine inlet air filter for cleanliness. 2. Adjust regulator to open position. 3. Operate tool in short bursts.
Tool will not run. Air flows freely from exhaust.	1. Motor vanes stuck due to buildup of foreign material.	1. Disconnect air supply & rotate tool assembly manually. 2. Try operating tool in short bursts. 3. Tap motor housing gently with rubber mallet. 4. Drip air tool lubricating oil into air inlet and soak moving parts.
Tool will not shut off.	1. Throttle O-rings damaged or dislodged in seat.	1. Replace O-ring or return to Clarke dealer

In the event that any of the above situations occurs, requiring the dismantling and overhaul of the tool, contact your CLARKE International Service Department on 020-8988-7400.

MAINTENANCE

WARNING! Make sure that the sander is disconnected from the air supply before starting any cleaning or maintenance procedures.

DAILY

- Drain water from the compressor air tank and air-line.
- Pour a few drops of CLARKE air line oil**, into the air inlet. This should be carried out regardless of whether or not an air line lubricator is used. If an air-line lubricator is not used, this procedure should be repeated after every two to three hours of use.

WEEKLY

- Check the air inlet screen filter in Fig 3 and clean if necessary.

CLEANING

- Keep the body of the sander clean and free from debris. Grit or gum deposits in the tool may reduce efficiency.
- After extensive use, remove the screen filter and flush out the sander with gum solvent oil or an equal mixture of SAE No10 oil and paraffin. Allow to dry before use.

SERVICING AND REPAIRS

- Major servicing and repair must be carried out by your local CLARKE dealer.

PERFORMANCE

Please note that factors other than the tool may effect its operation and efficiency such as reduced compressor output, excessive drain on the airline, moisture or restrictions in the line, or the use of connectors of improper size or poor condition which will reduce air supply.

**Clarke Air Line Oil is available from your CLARKE dealer part no. 3050825.

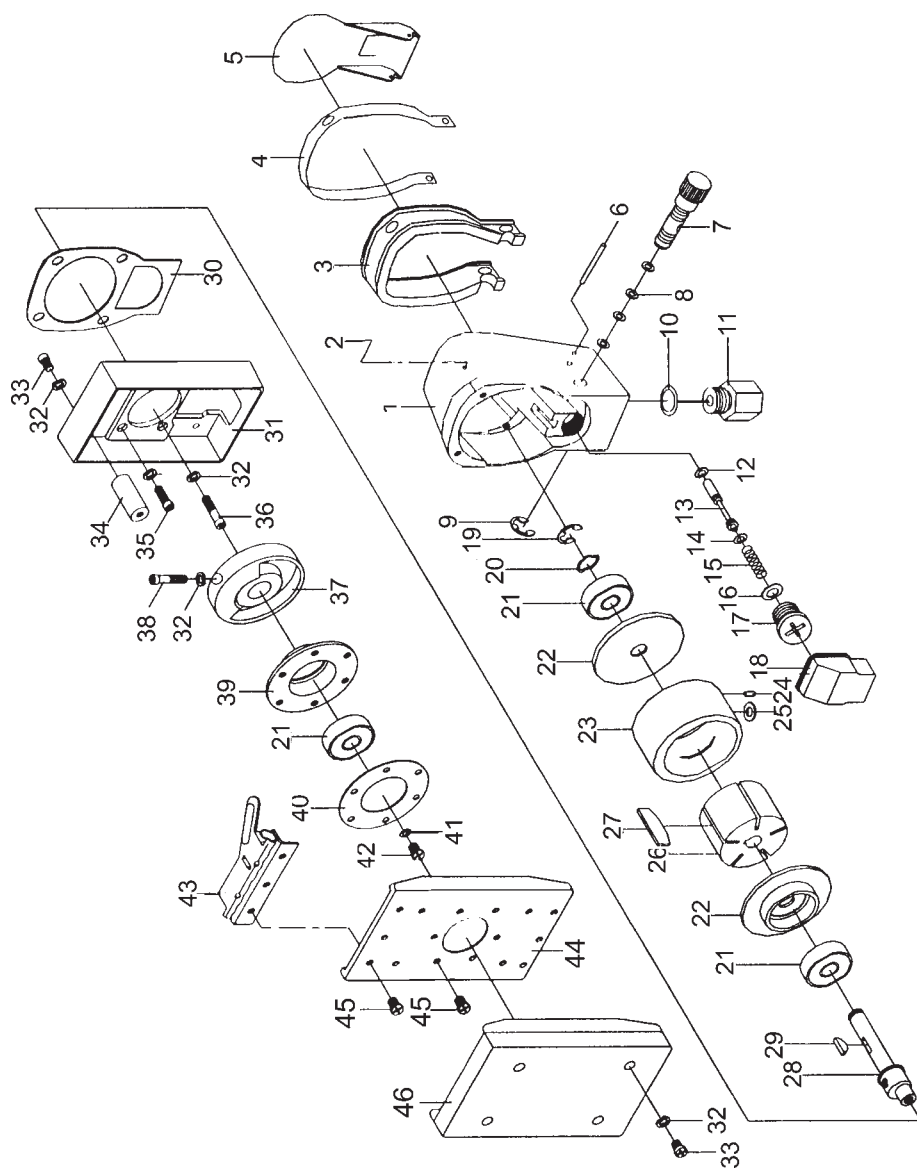
ACCESSORIES

A wide range of airline accessories are available including filter/regulators, lubricators, high pressure hoses, etc. Contact your CLARKE dealer for further information, or call CLARKE International on 01992 565333.



Fig 3

PARTS DIAGRAM



PARTS LIST

No	Description	Part No
1	Housing	RONCAT11101
2	Screw	RONCAT11102
3	Rubber	RONCAT11103
4	Housing Bar	RONCAT11104
5	Trigger	RONCAT11105
6	Trigger Pin	RONCAT11106
7	Air Regulator	RONCAT11107
8	O-Ring	RONCAT11108
9	Retainer Ring	RONCAT11109
10	O-Ring	RONCAT11110
11	Air Inlet	RONCAT11111
12	O-Ring	RONCAT11112
13	Valve Stem	RONCAT11113
14	O-Ring	RONCAT11114
15	Spring	RONCAT11115
16	O-Ring	RONCAT11116
17	Valve Plug	RONCAT11117
18	Muffler Cover	RONCAT11118
19	Retainer Ring	RONCAT11119
20	Washer	RONCAT11120
21	Rear End Bearing	RONCAT11121
22	Rear End Plate	RONCAT11122
23	Cylinder	RONCAT11123

No	Description	Part No
24	Cylinder Pin	RONCAT11124
25	O-Ring	RONCAT11125
26	Rotor	RONCAT11126
27	Rotor Blade	RONCAT11127
28	Spindle	RONCAT11128
29	Woodruff Key	RONCAT11129
30	Rear Gasket	RONCAT11130
31	Base	RONCAT11131
32	Spring Washer	RONCAT11132
33	Crosshead Screw	RONCAT11133
34	Flexible Leg	RONCAT11134
35	Screw	RONCAT11135
36	Screw	RONCAT11136
37	Eccentric Cam	RONCAT11137
38	Screw	RONCAT11138
39	Bearing Housing	RONCAT11139
40	Bearing Gasket	RONCAT11140
41	Washer	RONCAT11141
42	Bearing Screw	RONCAT11142
43	Paper Clamp	RONCAT11143
44	Base Section	RONCAT11144
45	Screw	RONCAT11145
46	Sanding Pad	RONCAT11146

VIBRATION EMISSIONS

HAND-ARM VIBRATION

Employers are advised to refer to the HSE publication “Guide for Employers”.

All hand held power tools vibrate to some extent, and this vibration is transmitted to the operator via the handle, or hand used to steady the tool. Vibration from about 2 to 1500 herz is potentially damaging and is most hazardous in the range from about 5 to 20 herz.

Operators who are regularly exposed to vibration may suffer from Hand Arm Vibration Syndrome (HAVS), which includes ‘dead hand’, ‘dead finger’, and ‘white finger’. These are painful conditions and are widespread in industries where vibrating tools are used.

The health risk depends upon the vibration level and the length of time of exposure to it.....in effect, a daily vibration dose.

Tools are tested using specialised equipment, to approximate the vibration level generated under normal, acceptable operating conditions for the tool in question. For example, a grinder used at 45° on mild steel plate, or a sander on softwood in a horizontal plane etc.

These tests produce a value ‘a’, expressed in metres per second per second, which represents the average vibration level of all tests taken, in three axes where necessary, and a second figure ‘K’, which represents the uncertainty factor, i.e. a value in excess of ‘a’, to which the tool could vibrate under normal conditions. These values appear in the specification panel below.

MODEL No: **CAT111**

DESCRIPTION: **AIR ORBITAL SANDER**

Declared vibration emission value in accordance with EN12096

Measured vibration emission value - a : less than 2.5m/s^2

Values determined according to EN28622-1

You will note that a third value is given in the specification - the highest measured reading in a single plane. This is the maximum level of vibration measured during testing in one of the axes, and this should also be taken into account when making a risk assessment.

'a' values in excess of 2.5 m/s^2 are considered hazardous when used for prolonged periods. A tool with a vibration value of 2.8 m/s^2 may be used for up to 8 hours (cumulative) per day, whereas a tool with a value of 11.2 m/s^2 may be used for $\frac{1}{2}$ hour per day only.

The graph below shows the vibration value against the maximum time the respective tool may be used, per day.



The uncertainty factor should also be taken into account when assessing a risk. The two figures 'a' and 'k' may be added together and the resultant value used to assess the risk.

It should be noted that if a tool is used under abnormal, or unusual conditions, then the vibration level could possibly increase significantly. Users must always take this into account and make their own risk assessment, using the graph above as a reference.

Some tools with a high vibration value, such as impact wrenches, are generally used for a few seconds at a time, therefore the cumulative time may only be in the order of a few minutes per day. Nevertheless, the cumulative effect, particularly when added to that of other hand held power tools that may be used, must always be taken into account when the total daily dose rate is determined.

DECLARATION OF CONFORMITY



Clarke[®]
INTERNATIONAL

Hemnall Street, Epping, Essex CM16 4LG

DECLARATION OF CONFORMITY

This is an important document and should be retained.

We hereby declare that this product(s) complies with the following directive(s):

98/37/ EC Machinery Directive.

The following standards have been applied to the product(s):

EN 792-6:2000

The technical documentation required to demonstrate that the product(s) meet(s) the requirement(s) of the aforementioned directive(s) has been compiled and is available for inspection by the relevant enforcement authorities.

The CE mark was first applied in: 2008

Product Description: Air Orbital Sander

Model number(s): CAT 111

Serial / batch Number: N/A

Date of Issue: 17/03/09

Signed:

J.A. Clarke
Managing Director

A SELECTION FROM THE VAST RANGE OF

Clarke®

QUALITY PRODUCTS

AIR COMPRESSORS

From DIY to industrial, Plus air tools, spray guns and accessories.

GENERATORS

Prime duty or emergency standby for business, home and leisure.

POWER WASHERS

Hot and cold, electric and engine driven - we have what you need

WELDERS

Mig, Arc, Tig and Spot. From DIY to auto/industrial.

METALWORKING

Drills, grinders and saws for DIY and professional use.

WOODWORKING

Saws, sanders, lathes, mortisers and dust extraction.

HYDRAULICS

Cranes, body repair kits, transmission jacks for all types of workshop use.

WATER PUMPS

Submersible, electric and engine driven for DIY, agriculture and industry.

POWER TOOLS

Angle grinders, cordless drill sets, saws and sanders..

STARTERS/CHARGERS

All sizes for car and commercial use.



PARTS & SERVICE: 0208 988 7400

E-mail: Parts@clarkeinternational.com or Service@clarkeinternational.com

SALES: UK 01992 565333 or Export 00 44 (0)1992 565335

Clarke® INTERNATIONAL Hemnall Street, Epping, Essex CM16 4LG
www.clarkeinternational.com